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Abstract
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Comments
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Traces and Hopes of Design Research: An Interview with Gui Bonsiepe,* Klaus Krippendorff, Siegfried Maser,* and René Spitz*

Sandra Groll*
**Translated by Kate Hunter*

From author design to industrial design, graphic design and interface design, to name but a few distinctions, the fields of design seem to be becoming more and more differentiated.[1]

In your opinion, is there still a general definition that covers "contemporary German design"?

KK: I don't feel comfortable associating a definition of design with a specific nationality. To me, design is a basic human ability to construct or improve on the construction of our world with responsibility to those affected, directly or indirectly. Of course, there are cultural differences to be honored, but the process of proposing responsible innovations is not explained by national boundaries.

SM: German design would be like German physics (this actually existed under the Third Reich!). In "rational behavior," a specification like "German design" is meaningless in scientific activity. As a consequence, any distinction should rather be project-specific and task-focused—for example, the medical sphere, living space, the world of work, etc.—not national and not discipline-based, as in ergonomic design, ecological design, and so on.

RS: No. It's a cliché. First of all, design has always been an international phenomenon because industrialization is an international process, and design is a substantial part of industrialization. Second, any national label would reduce design to its superficial aspects, to the style features of formal aesthetics. But in that case we would no longer be talking about a multi-layered process, but rather about cosmetic changes.

GB: You are asking about identity. I will limit myself to what determined the image of "German design" until the 1970s and what still shows aftereffects in certain areas, even today. "German design" can be characterized by its

1 Author design (German *Autorendesign*) is a term used in Germanophone countries. On the one hand, it describes designs for which the name and personality of the designer play a central role. On the other hand, it can also mean individual objects and small series of objects created exclusively for (design) galleries.

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link to technical innovation and complex products. This characterization does not fix attention primarily on morphological or chromatic attributes, but on an approach in which the very mention of the word "function" fails to evoke a visceral rejection. "Signature Design" is correctly defined as the antithesis of the HfG Ulm's conception of design.

How much theory does design need these days?

GB: If you can understand theory as a space for critical reflection, then it should be indispensable, given the current hegemonic, one-sided market discourse. Not theory in the sense of noncommittal speculation removed from the empirical, but rather in the sense of reflection linked to factuality. My view is that it would do design theory no harm to draw on expertise and knowledge of the history of design.

RS: If by that you mean a foreign language composed of stilted jargon that takes years to learn to exchange ideas within closed communities with traditional rituals and static visual codes—well, no one needs that. All the same, we are experiencing a worldwide boom of conferences on matters of design theory that move in the direction of closed communities and jargon. If you mean the ability to reflect not only on the past, but also to speculate on the future, then that is part of design as well.

SM: In 1990, I wrote a presentation with the title "Theory Means Understanding Practice." My conclusion was that we should understand practice as "rational action." Design as rational action—where any decisions made must be justified as much as possible, or at least made to sound plausible—has been developing in the direction of "more reason" during the past few years: from the spontaneously artistic to the rational interdisciplinary. So how much theory does design need? Rather more than less: working on an interdisciplinary team requires more argumentation, more communication, more mutual understanding than is or was the case with the solitary "do-it-yourselfer." The DIY types just have to, or had to, understand themselves.

KK: I think one needs to distinguish general conceptions of design, including of design methods and research, and the kinds of theories that are used to justify the working of a particular design. If the former is general enough, for which I have been striving, there do not need to be many theories. In my opinion, the latter merely serve to develop

a particular proposal for a design, and there could be a large number of them, usually highly specific to a particular application. It would be a mistake to train designers in any specific theory without the larger conception of design in mind.

The HfG Ulm left its mark on German design. At least it seems to be so with conceptions of design research.

From your viewpoint, what does the HfG Ulm mean for international design research?

KK: The HfG Ulm conducted quite a number of pioneering studies, largely of visual phenomena. I was part of the short-lived Institute for Visual Perception. We investigated color perception. But empirical studies in Ulm ended less in generalization or in the solution of practical problems than in demonstrations of the factors that made a difference. Internationally, Ulm is known less for design research than for its design philosophy and style, which incidentally is often called "international."

GB: I see the significance of the HfG Ulm in that they wanted to build a bridge to the sciences and that they covered topics that had lain beyond scientific research until then. The HfG Ulm vindicated the world of objects and symbols shaped by industry as a legitimate research area, which the established academic disciplines had always treated largely with indifference. Until then, design discourse had been determined primarily by a single discipline: art history. Nonetheless, it would probably be more fruitful to integrate design history into the framework of a history of material and semiotic artifacts; in doing so, we avoid the danger of defining design history in terms of style characteristics and aesthetic aspects. What later came to be called cultural studies did not even register the phenomenon of design; it characterized itself by a disregard for material objects, which seems to be changing now.

RS: The significance of the HfG Ulm's contribution to international design research hasn't even begun to be appreciated. We are still at the beginning of the work necessary to show just how far ahead of their time the main figures at the HfG Ulm really were. (My contribution in this issue provides more information.) This state of affairs is due to the passing of time: The closing of the HfG Ulm had to lay 20 years in the past for design in general to have an inkling of the significance of that school.

Then it took another 20 years to understand the political and organizational framework conditions that existed within the HfG.

Siegfried, you yourself did your doctorate under Max Bense, whose influence on the HfG Ulm by the attempt to establish design as a science cannot be underestimated. Is that endeavor still beneficial for contemporary design practice?

SM: The Ulmers called their "house philosophy" technical rationalism. Rationalism means explanation; explanation leads to co-relation. These [ideas] can be studied as the foundations for rational decision-making. The primary example is technology.

Max Bense was convinced that even aesthetics (as an education in sensory perception) is capable of rational argumentation: An aesthetic value can be measured as the redundancy of entropy in analogy to the order of complexity (G. D. Birkhoff). This aesthetics of information was an important foundation for the "computer art" that came later. Its relevance today? The maximizing of order/arrangement/structure in the face of simultaneous minimizing of complexity (for economic, ecological, or human reasons) is a "principle of rational design" in many areas of application. Even nature herself designs some things according to this principle of design purity, alongside the (antithetical) principle of originality.

Klaus, you graduated from the HfG Ulm with a highly respected conceptual project.[2] To what extent did your studies at the HfG Ulm influence your future career and your approach to design theory?

KK: The answer to your question is simple: significantly. I came to the United States to continue studying what I had been exposed to in Ulm: social perception, human communication, systems theory, cybernetics, information theory, and planning theory. My mission was to learn how to inform design with those topics. Design theory was in its infancy and design research not really known. What Ulm gave me, and presumably other students as well, was a platform for talking about advanced ideas—not too deeply, but sufficient to ask how they could inform design in post-war society. Scholars working on the cutting edge of different areas visited Ulm, gave lectures and courses, introduced ideas into our conversations that left us trying to put them together—which in itself required considerable intellectual creativity. I think the diversity of paths that Ulm opened up for me is what carried me into what I do now.

2 Klaus Krippendorff, "Über den Zeichen- und Symbolcharakter von Gegenständen: Versuch zu einer Zeichentheorie für die Programmierung von Produktformen in sozialen Kommunikationsstrukturen" [About the Sign and Symbolic Character of Objects: Towards a Theory of Meaning for Artifacts to Participate in Social Communication Networks], Diplom Thesis, Hochschule für Gestaltung, Ulm, 1961, http://repository.upenn.edu/asc_papers/233 (Accessed April 7, 2014).

Gui, you were employed at the HfG Ulm in the end stage. In your opinion, what influence did the closing of the school on discourse have regarding design research in Germany?

GB: Closing the HfG Ulm led to a diaspora and the spreading of what you could call the Ulm Approach, which understandably came up against blatant aversion in the face of all the attempts to make design a fine art in the midst of all the irrationalism. The school's magazine, one of the first design publications to appear after the Second World War, disseminated research results taken from the perspective of design. So which post-secondary institutions should also have been working with design research? Hardly any of the universities of that time [did so]; they were still dominated by bourgeois, 19th-century ideas of education. The basic conditions for design research were achieved only with the consolidation of study programs for design, which came at the price of academization. The HfG Ulm was a forerunner in this process.

Regardless of the closing of the institution, the HfG set new standards for rigorous intellectual work in the area of design discourse and placed design in the social sphere, where it took on a non-affirmative position—which was clearly not appreciated in the political sphere.

What would the rest of you say about the closing of the school?

SM: The HfG was a private school that was not officially recognized by the State. In the meantime, design programs have been set up at universities and other post-secondary institutions (including art colleges). Along with bachelor's and master's programs, more doctoral programs are being offered—yet a doctorate is a scientific qualification. The process begun in Ulm of researching the rational foundations of design—perhaps it had already started with the Bauhaus, with the foundations of design in foundation courses offered by Itten and others—therefore had a profound influence on further development. Investigating the foundations of one's own discipline creates identity, awareness, and self-awareness, so it is still beneficial even today.

KK: I think closing Ulm was one of the most devastating actions taken against design education and culture in Germany. To be sure, not everything in Ulm was perfect. Some faculty favored working on projects for industry over teaching students. And some who introduced new ideas were seen as a threat to other people's little empires. But for Germany, Ulm was a beam of light in the dark,

amazingly productive and, during the short time of its existence, it generated numerous creative graduates who tried to carry Ulm's torch elsewhere.

RS: I cannot give a serious answer to this question. It might be suitable as a fascinating topic for a research project. I can only formulate three dubious speculations. Let's assume that the HfG had continued to exist and had not been closed down in 1968. Then there are two possibilities:

1) The HfG would have survived as a private institution. Then it would probably have had another difficult 20 years, 20 long years of opposition, as it had had since its establishment. It is only since the 1990s that the conviction has spread in the politics of education and culture that an institution like the HfG served to fill a gap that had not even been perceived by politicians of the time. In that case, thanks to the research it had managed to carry out, the HfG would carry a prestige similar to that of MIT's Media Lab and would play a comparable role.
2) The HfG would have been nationalized in 1968. This would have brought about a cultural shift, resulting in the fact that the HfG of 1990 would have been indistinguishable from all the other German universities of applied sciences. Maybe 1990 would have seen a revolt to the tune of "Back to the roots!" Then the HfG might be on the same level as the Royal College of Art today.
3) My third speculation refers to reality as it happened. On the one hand, it cannot be overlooked that the HfG has taken on a seductive power: More than ever, its achievements are mythologized and its historical reality is romanticized. For discourse on design research, this means that the HfG is now seen and discussed in the context of clichés and buzzwords.

The idea of science is always the result of complicated discourse. The sciences that are historically seen as "young," but are already firmly established, such as psychology and sociology, have successfully managed to assert themselves. It seems that design research in Germany has yet to find its identity.

Which scientific standards should design research follow?

RS: Every generation has to negotiate for itself what science is. This is why I find it ridiculous when a catalog of formal

criteria that has proven itself in other contexts is simply transferred to new constellations. In the end, it is a fact that every science has to prove its relevance for society and that the value of its contribution must be comprehensible. What arises from science—knowledge and methods—must be intersubjectively understandable. Any claims made by science must remain relevant until they are superseded.

GB: The standards of design research must be developed, for scientific standards not only exist in the abstract sphere, but also are linked to specific content. Supposedly, generally valid standards should not be imposed on design research, especially if doing so would encourage ritualized scientific conduct but not serve to move things forward.

SM: First of all, design will find its own way here. In this process, we will naturally come upon existing examples, or standards: How did this process work in psychology? And in sociology? Mathematics (long the ideal of all sciences)? In physics and technology (the role model of HfG Ulm)? How about biology or medicine? We will find both common areas, or models, and differences. Science is about development, further development: new facts build on each other and have a certain period of validity.

"Design research in Germany" as a recognized science? Recognized by whom, exactly? This is a problem for the designers themselves. When a designer's work at least partly arises from reasonable, rational action, then this part would be processed according to the usual standards: logic. Then the designer can build on the findings of others and the constant starting again from zero is over. Often enough, designers do not only act stupid; they really are: They have no idea about things that have existed for a long time.

KK: It would be a serious mistake to buy into the established criteria of scientific knowledge. Science theorizes the world as it is. Design changes it to the better for its stakeholders without, or only minimally, impeding those not involved.

To me design research has to investigate:

- The visions that potential stakeholders are willing to consider and, among those, which are desirable and which would be opposed;
- What is variable and what is not;
- The possible paths from what exists to what is desirable; and
- The network of stakeholders that could realize a design.

To accomplish these aims, design research needs to develop and test methods that inform the design process and also substantiate the claims made by designers to their stakeholders so as to see the virtues of realizing a proposed design.

The difference between these research objectives and that of traditional methods of scientific research lies in their epistemologies: Nobody is able to study the future with data from yesterday. Design research may make use of models, prototypes, or established theories, but they can be no more than heuristic devices to develop plausible proposals that convince the stakeholders of the virtues of a design. In the end, design research needs to support arguments that enroll the stakeholders of a design into the designer's project, ultimately realizing desirable futures, not necessarily as intended by designers.

Should design research as a discipline establish its own designerly concept of science and research, or—as a transdiscipline, should it develop an integrative concept of research instead?

RS: I don't think the two ideas are mutually exclusive. Design research must form its genuine basic requirements. To do so, it must use the tools that are suitable for the task. If its theories and methods are no longer helpful, others must be adapted and new ones developed. Of course, that is a wonderfully promising idea, as I see it: that we don't have to concern ourselves merely with repeating formulas learned by heart from previous centuries, but rather focus constantly on the critical search for new certainties.

GB: Established sciences will rightly treat the claims of any yet unproven new research discipline that plays around with integrative intentions with some reserve. Let's take a successful example from history: systems theory, which opened up new perspectives for mathematicians, engineers, social scientists, and economists. I wish design theory had the same potential, whether it appears as design theory or not. Designers have always claimed a comprehensive approach to problem-solving that can or should be applied to design research, but without any ambition to "lead."

KK: I don't like the word "discipline" in this context. Design research should not discipline anyone but provide empirical means to support the arguments that designers need to make to their stakeholders.

Design research should freely draw on knowledge from relevant scientific disciplines but must be careful not to adopt their validity criteria. Since you ask, I would not describe design research as integrative. Design has to keep many variables in mind but does not need to integrate diverse knowledges from other disciplines. The mission of general systems theory, for example, is integrative, but is committed to the use of biological metaphors of wholeness coupled with scientific explanations of the past. It cannot outline steps leading to yet unrealized futures.

Klaus, you have lived in the United States for quite a long time. What distinguishes the research landscape there from that in Europe? What value does design research have there?

KK: In the United States, design research is not so much an issue as it is in Germany. In the U.S., it is simply done without much systematic treatment. This is due largely to the more pragmatic approach taken here, even in the sciences, in which anything goes if one can justify it in terms of informing useful practices.

Regarding HfG Ulm's legacy, to me Apple is the most outstanding, albeit unacknowledged, successor to Ulm, not because of its style but because of its extensive research. Ulm did not exist long enough to see what was possible. The technological/cultural innovations that Apple has brought about are what I would have liked to see Ulm advance and teach—based less on theoretical conceptions than on ethnographic inquiries of the practices of living that people would be eager to improve upon and pay for, without yet knowing what they are.

René, could the industrial-like projects of the HfG Ulm be considered forerunners of contemporary designerly research practice?

RS: Otl Aicher developed a model for the HfG that complemented Humboldt's two pillars of post-secondary institutions—research and teaching—with a third equal activity that he called development. By these pillars, he didn't mean three completely separate activities. The substance in Aicher's model consisted in the initiative that research, teaching, and development should form a cycle and feed back into each other by means of their connectedness. The development groups that were then established at the HfG worked on commissions from both the private and public sectors. As far as I can tell, this model was the first instance of design research institutionalized at a post-secondary institution. Decisive impulses were bundled together—above all, generalism

instead of particularism; teamwork among natural and social scientists, businesspeople, engineers, and designers; and rational argumentation instead of emotional strong-arming. Until then, [these possibilities] had only been uttered by individuals or outside post-secondary institutions; taken as a whole and measured by their results, they qualify the Ulm Model as design research. So I would never refer to any "forerunner," but rather describe the Ulm Model as the primary realization.

René, are these approaches still relevant for design research?

RS: The worst thing we could do with our inheritance would be to copy it without critical analysis. We should ask ourselves which of the requirements of that time are still relevant today and which have changed. To that I can say first that the idea of the cycle of iterative processes that led to permanent adjustment is still relevant today, and that it should supersede the simplifying image of a linear sequence. What's more, it is still correct that post-secondary institutions should not rest only on research and teaching but must understand that practice; what Aicher called "development" is an integrative aspect of their duties.

Gui, among other things, you concern yourself with the question of the role of design in a global society that can be distinguished in terms of center and periphery. Has this idea been neglected in design research?

GB: Those at the center tend to suffer from a lack of information about the periphery (politically speaking). When they then turn to this neglected area, they are unable to do it justice if their attention is marked by a paternalistic attitude—that is, if it comes from a narrow-minded perspective that is fixed on the center. Design research in the periphery is occasionally based on things that are seen as international standards. This phenomenon is supported by a counterproductive point system according to which the publication of a paper in a foreign specialist journal earns more points in the ranking system for the author's CV than publishing in a domestic journal.

In your opinion, should design research concentrate more on political issues in design again?

GB: Design research should definitely do that. Over the past three decades, political issues have been carefully tuned out, if not consigned to the realm of non-issues. This means that today's design research is to a large extent politically sterile.

Siegfried, as far back as 1972, you suggested establishing design theory as a trans-classical science, meaning a science that leaves the functions of binary logic (subject/object, zero/one) behind. Rather, you thought design theory should use multivalent thinking to facilitate transdisciplinarity. What role can design theory play as a trans-classical science in a time characterized by the idea of networks?

SM: "Trans-classical" or post-classical means something extremely simple, even trivial: traditional = classical science is that which is created by knowledge. Only when I possess knowledge can I do something with it: I can apply it—for example, the application of physical knowledge in technology. Where there is nothing, I cannot apply anything. I called this use of knowledge post-classical, trans-classical. It not only concerns the production of knowledge, but also the application of knowledge as a "reasonable, rational activity" that makes use of knowledge [and] therefore is trans-classical. What is used? Either the knowledge is already there, or I have to find it out for myself. Applying knowledge is not only about true or false, but first and foremost [it is] about the diversity of relevant possibilities and then the decision [about] which of the possibilities should be made real. In the realm of possibilities, it is important to find out about the unique qualities, the common qualities, and the differences between the individual solutions. This [perspective] makes connections and networks visible and usable, recognizable and applicable.

René, you have published a book on the political story of the HfG Ulm. The way politics perceived what could be understood as science, and what could be considered as science worthy of support, were decisive for the end of the HfG Ulm. How important is support from politics for new areas of "wissenschaft" such as design research nowadays?

RS: The question we should ask is what politics should support. Practically speaking, politics should only negotiate the basic conditions for what is important to society. The first thing is that society has to recognize the significance of design research. The proponents of design research have the responsibility to make people understand this significance. The value of design research is not self-evident. I am convinced that design research makes a helpful, productive, and therefore important contribution to the development of society. So I think it's right to support design research. This support generally comprises two factors: attention or appreciation and financial support.

Researchers' struggle for future resources consumes the greater part of their existing resources at the cost of their actual research work. This structural dilemma will not be solved the minute that politics discovers design research.

Klaus, you have advocated that human sense-making—the humans' ability to construct their own socio-cultural worlds—is the key proposition for design thinking. Is design a humanist activity?

KK: Humanist? I would say no. Humanism is committed to a world view that focuses on human values and human nature as opposed to divine or supernatural matters. To me humans do not have a fixed nature, and claiming such a nature is not conducive to the fundamental premise of design, which aims at improving or finding new interfaces between humans and technology.

I prefer the terms "human-centred" and "culture-sensitive" as they shift the attention from technology, the old functionalism, and aesthetics to how individuals and communities interact with their artifacts and improve their lives. To me the challenge is to create artifacts that make sense to their users, to which they can bring their own meanings, invent their own uses within the communities of their choice. This is what I advocate as human-centered and culture-sensitive design.

Theories and research perspectives that try to do justice to the heterogeneous nature of design require special approaches, forms of knowledge, methods, and even discourse. At the same time, design in practice has to do with a heterogeneous world in which linear models of this very world and how to "improve" it have reached their limits.

In your view, what are the challenges currently facing design wissenschaft, design research, design practice, and teaching?

SM: What special relationship do designers have to the world, to reality, and to their changes and improvements? What competencies do they possess? What problems do they solve? What can they do better than others? Recognizing the answers to these questions is, first and foremost, the task of designers themselves: Self-awareness creates identity. It is helpful to look into the past: the history of design; to look at the present: the politics of design; and to look into the future: at utopias, projects, projections that intervene in developments or even want to steer, to lead them.

KK: I think today's world presents a considerable challenge to professional design. We live in what I have characterized as a design culture—a culture in which the difference between designers and users is blurred. The critical distinction is not between designers and users who are told by manufacturers and educational institutions how artifacts are to be handled, but between design for others (professional design) and design for one's own use (design in everyday life). Professional designers need to enable their designs to be re-designable by those who claim a stake in them. A computer, for example needs to enable their users to configure it, to design a world suitable to them. A computer serves functions the user decides. Contemporary designers and design research that supports their work face an extremely flexible and unpredictable world in which design activity is widely distributed and practiced everywhere.

Familiarity and expertise in design research, design methods, and the ability to convert one's own understanding of stakeholders' understanding into efficient artifacts distinguishes professional designers from designers in everyday life. This is why design research, done well, is so important, and teaching these subjects needs to encourage responsible design practices for professional designers to be ahead of everyday practices.

GB: To do justice to today's challenges, first we have to create a differentiated problem and relevance awareness, which means separating ourselves from a narcissistic sense of design that gets hung up on particulars, even when this is being celebrated in the largely conformist media. A recommendation could be to create a precise language for design, to examine the coherence of terms used in design discourse.

RS: The greatest challenge lies within ourselves and is an intellectual one. Today, we must rapidly become clear on the fact that design is usually not the solution, but the problem—or at least a relevant part of the problem. (Horst Rittel spoke of "wicked problems.") The conceit of always being able to control, rule, predict, know, and do everything is currently widespread in design. Fatally, the tendency has arisen to look neither beyond the end of the day nor beyond the confines of the box. I take

this as true unwillingness—as a deliberate refusal—to investigate the ecological, cultural, economic, and political consequences of our work as designers as part of the bigger picture.

What design ethics are in demand today?

SM: Ethics—the study of the social life of people living in communities, regulated according to prescription and proscription—are not specific to design. The important thing is the clarification of questions concerning designers' professional ethics—for example, responsibility and shared responsibility, in terms of majority decision-making in groups.

RS: Design doesn't need its own set of ethics. Why should there be separate ethics for physicists or musicians? We would be a lot further ahead if more designers were aware of their ethical responsibility as people. Ethics are about the discussion of the ultimate matter: human existence. In the end, I make my last journey without a power tie or a mechanic's boiler suit, or designer frames for my glasses.

GB: I would simply insist on asking myself the same two questions when something is designed: Who is this being designed for? And under what social, economic, and technological conditions am I designing? To raise our awareness of the contradictions that become apparent between the socially desirable, the technologically possible, the environmentally beneficial, the economically viable, and the culturally tenable should be one of the central goals of contemporary design ethics.

KK: To me, ethics builds on my answer to the previous question. When the competence to design for others is coupled with designers' accountability to those their work affects, ethics is manifest in the respect paid for the diversity of available conceptions. The commitment to examine how the visions that designers develop with their proposed designs realize the dreams that potential users have of their lives; and to insure that their proposals do not unduly burden those unable or unwilling to take advantage of them, is an inherently ethical commitment. It does not spell out what is virtuous. It merely preserves the voices of stakeholder communities in professional design.